UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,165	03/09/2004	Wolodymyr Mohuchy	ITDE-PAV108US	4020

23122 7590 06/03/2005

RATNERPRESTIA
P O BOX 980
VALLEY FORGE, PA 19482-0980

EXAMINER	
LE, HOANGANH T	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/797,165	MOHUCHY, WOLODYMYR	
	Examiner	Art Unit	
	HoangAnh T. Le	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Hoanganh Le
Primary Examiner

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/9/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2, 5,16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by James et al (the US Patent No. 4,063,245).

The James et el reference teaches in figures 1 and 7 a phased array antenna comprising: a plurality of radiating elements 74s-74e arranged as orthogonal pairs in a herringbone pattern, and each radiating element includes multiple microstrips disposed conformally on a planar substrate 1. Each radiating element includes a dipole formed as a pair of dipole microstrips 74a-74e extending from a pair of launch points (figure 7). Each of the radiating elements is oriented approximately 45 degrees relative to an array scan axis (figure 7). The multiple microstrips are arranged to form a current sheet for an aperture of the phased array antenna (figure 1). The radiating elements are arranged to provide mutual coupling to each other to extend operation at a low end of the frequency band (figure 7).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al (cited above) in view of Tsai et al (the US Patent No. 6,400,332).

The James et al reference teaches every feature of the claimed invention, excluding a top loading microstrip providing a capacitive load to the dipole and each radiating element being excited by a balance transmission line.

The Tsai et al reference teaches in figures 1 and 2 the use of top loading microstrip 22 and each radiating element being excited by a balance transmission line 71,72 to improve the characteristics of the antenna.

Since one of ordinary skill in the art would recognize the benefit of improving the characteristics of the antenna, it would have been obvious to provide James et al with a top loading microstrip as taught by Tsai et al.

6. Claims 6, 7-13 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al (cited above) in view of Dempsey et al (the US Patent No. 5,563,616, cited by applicant).

The James et al reference teaches every feature of the claimed invention, excluding the substrate being formed from a compound having electrical and magnetic

properties and the microstrips being disposed one-quarter wavelength above a ground plane.

The Dempsey et al reference teaches in figures 2-4 the use of a substrate 18 being formed from a compound having electrical and magnetic properties and the microstrips 12,14 being disposed one-quarter wavelength above a ground plane 16 (col. 4, lines 55-58) in order to improve the performance of the antenna.

Since one of ordinary skill in the art would recognize the benefit of improving the performance of the antenna, it would have been obvious to provide James et al with the substrate being formed from a compound having electrical and magnetic properties the microstrips being disposed one-quarter wavelength above a ground plane as taught by Dempsey et al.

Regarding claims 8,12, 13 and 25-26, it would have been an obvious matter of design choice to have the composite substrate being 1/16 of a wavelength, the dielectric substrate being 3/16 of a wavelength in thickness, or both the dielectric substrate and the composite substrate have an approximate thickness of 1/4 of a wavelength and yield an approximate thickness reduction ratio of 6.6 to 1, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al (cited above) in view of Nalbandian et al (the US Patent No. 6,285,325).

The James et al reference teaches every feature of the claimed invention, excluding the multiple microstrips being formed by etching or depositing on the substrate.

The Nalbandian et al reference teaches that the multiple microstrips being formed by etching or depositing on the substrate is well known in the art (col. 4, lines 37-38).

It would have been obvious to one of ordinary skill in the art to provide James et al with the multiple microstrips being formed by etching or depositing on the substrate as taught by Nalbandian et al in order to improve the characteristics of the antenna.

8. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al (cited above) in view of Mohuchy (the US Patent No. 5,933,108, cited by applicant).

The James et al reference teaches every feature of the claimed invention, excluding a transmit/receive network connected to the radiating elements for varying the amplitude and phase of a transmitted signal, the transmit/receive network includes a receiver for determining direction and phase of a received signal, and a processor for controlling the amplitude and phase of the transmitted signal based on the direction and phase of the received signal and the transmit/receive network includes an array of modular transmitters for exciting a corresponding array of the radiating elements.

The Mohuchy reference teaches in figures 1-3 a transmit/receive network connected to the radiating elements for varying the amplitude and phase of a transmitted signal, the transmit/receive network includes a receiver for determining

direction and phase of a received signal, and a processor for controlling the amplitude and phase of the transmitted signal based on the direction and phase of the received signal and the transmit/receive network includes an array of modular transmitters for exciting a corresponding array of the radiating elements.

It would have been obvious to one of ordinary skill in the art to provide James et al with a transmit/receive network and a processor as taught by Mohuchy in order to control the amplitude and phase of the transmitted signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hoanganh Le
Primary Examiner